Computing Scope in a CCG Parser

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Abstract

Ambiguities arising from alternations of scope in interpretations for multiply quantified sentences appear to require grammatical operations that compromise the strong assumptions of syntactic/semantic transparency and monotonicity underlying the Frege-Montague approach to the theory of grammar. Examples that have been proposed include covert movement at the level of logical form, abstraction or storage mechanisms, and proliferating type-changing operations. The paper examines some interactions of scope alternation with syntactic phenomena including coordination, binding, and relativization. Starting from the assumption of Fodor and Sag, and others, that many expressions that have been treated as generalized quantifiers are in fact referential expressions, and using Combinatory Categorial Grammar (CCG) as a grammatical framework, the paper presents an account of quantifier scope ambiguities according to which the available readings are projected directly from the lexicon by the combinatorics of the syntactic derivation, without any independent manipulation of logical form and without recourse to otherwise unmotivated type-changing operations. As a direct result, scope ambiguity can be efficiently processed using packed representations from which the available readings can be simply enumerated.

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